

**Amendments to the Claims:**

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An active electronic device, comprising:
  - a carbon nanotube;
  - a first electrode connected to one end of the carbon nanotube;
  - a second electrode connected to the other end of the carbon nanotube; and
  - a third electrode facing the carbon nanotube to irradiate the carbon nanotube with electromagnetic waves,

wherein ~~the amount of current flowing into a conductance of the carbon nanotube is changed controlled by varying a frequency of the electromagnetic waves, at least high frequency electromagnetic waves~~, radiated from the third electrode onto the carbon nanotube, wherein the frequency includes at least a predetermined frequency so that the conductance of the carbon nanotube is increased.

2. (Original) An active electronic device according to claim 1, wherein the carbon nanotube has metallic properties.
3. (Original) An active electronic device according to claim 1, wherein the first electrode and the second electrode are formed on the front surface of a substrate, and the third electrode is formed on one of the front surface and rear surface of the substrate.
4. (Original) An active electronic device according to claim 1, wherein the amount of current flowing into the carbon nanotube is changed by using high frequency electromagnetic waves radiated from the third electrode to make the amount of current flowing into the carbon nanotube larger than the case when the carbon nanotube is not irradiated with any electromagnetic wave.
5. (Original) An active electronic device according to claim 1, wherein the carbon nanotube is a multi wall carbon nanotube.

6. (Original) An active electronic device according to claim 1, wherein the length of the carbon nanotube is within the range of equal to or more than 1 nm and equal to or less than 100  $\mu$ m.

7. (Original) An active electronic device according to claim 1, wherein the first, second, and third electrodes are respectively formed of a material selected from the group consisting of Au, Pt, Ag, and Si.

8. (Original) An active electronic device according to claim 2, wherein a specific inductive capacity of the substrate is 1 or more and 100 or less.

9. (Original) An active electronic device according to claim 2, wherein the substrate is an insulator that contains a material selected from the group consisting of silicon oxide, titanium oxide, aluminum oxide, and silicon nitride.

10. (Currently Amended) An electronic apparatus, comprising:  
an active electronic device including: a carbon nanotube; a first electrode connected to one end of the carbon nanotube; a second electrode connected to the other end of the carbon nanotube; and a third electrode placed near the carbon nanotube to irradiate the carbon nanotube with electromagnetic waves; and

a driver circuit for causing the third electrode to output ~~at least high frequency~~  
electromagnetic waves and varying a frequency of the electromagnetic waves to control a conductance of the carbon nanotube, wherein the frequency includes at least a predetermined frequency so that the conductance of the carbon nanotube is increased.

11. (New) An active electronic device according to claim 1, wherein the frequency is about 1GHz.

12. (New) An active electronic device according to claim 10, wherein the frequency is about 1GHz.